

# WEST Search History

DATE: Tuesday, December 07, 2004

**Hide? Set Name Query**

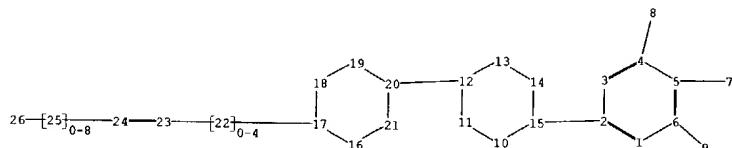
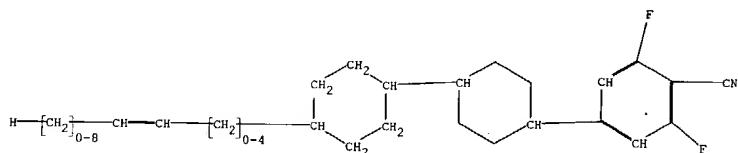
**Hit Count**

*DB=USPT,EPAB,JPAB,DWPI,TDBD; PLUR=NO; OP=ADJ*

L1 jp-2003268372-\$ did. or jp-2003003169-\$ did. or de-10220549-\$ did.

6

END OF SEARCH HISTORY



chain nodes :

7 8 9 22 23 24 25 26

ring nodes :

1 2 3 4 5 6 10 11 12 13 14 15 16 17 18 19 20 21

chain bonds :

2-15 4-8 5-7 6-9 12-20 17-22 22-23 23-24 24-25 25-26

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 10-11 10-15 11-12 12-13 13-14 14-15  
16-17 16-21 17-18 18-19 19-20 20-21

exact/norm bonds :

10-11 10-15 11-12 12-13 13-14 14-15 16-17 16-21 17-18 18-19 19-20  
20-21

exact bonds :

2-15 4-8 5-7 6-9 12-20 17-22 22-23 23-24 24-25 25-26

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6

Match level :

1:Atom	2:Atom	3:Atom	4:Atom	5:Atom	6:Atom	7:CLASS	8:CLASS	9:CLASS
10:Atom	11:Atom	12:Atom	13:Atom	14:Atom	15:Atom	16:Atom	17:Atom	
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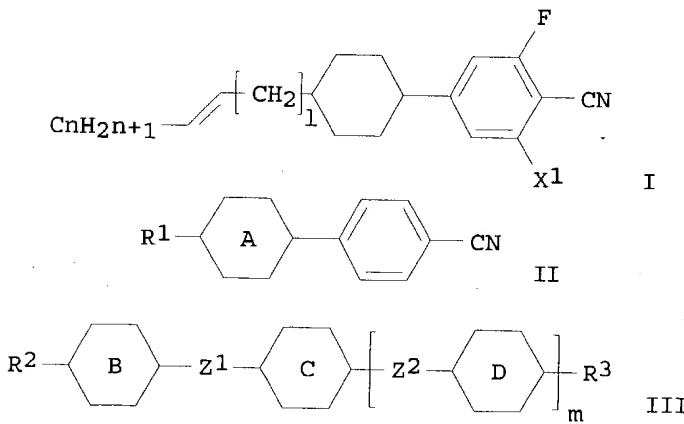
L4 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2003:750981 CAPLUS  
 DN 139:268115  
 ED Entered STN: 25 Sep 2003  
 TI Nematic liquid crystal compositions and liquid crystal displays  
 IN Kuriyama, Takeshi  
 PA Dainippon Ink and Chemicals, Inc., Japan  
 SO Jpn. Kokai Tokkyo Koho, 12 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C09K019-42  
 ICS C09K019-12; C09K019-14; C09K019-20; C09K019-24; C09K019-30;  
       C09K019-34; G02F001-13; G02F001-133; G02F001-139  
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other  
       Reprographic Processes)  
 Section cross-reference(s): 75  
 FAN.CNT 1  

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI JP 2003268372	A2	20030925	JP 2002-76085	20020319
PRAI JP 2002-76085		20020319		

 CLASS  

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
JP 2003268372	ICM	C09K019-42
	ICS	C09K019-12; C09K019-14; C09K019-20; C09K019-24; C09K019-30; C09K019-34; G02F001-13; G02F001-133; G02F001-139

 OS MARPAT 139:268115  
 GI



AB Liquid crystal compns. containing (1) I (1, n = 0-10; X1 = H, F), (2) II (R1 =  
     C2-8 alkyl, alkoxy, alkenyl, alkenyloxy; A = 2,5-pyrimidinedyl,  
     2,5-pyridinedyl), and (3) III (R2-3 = (F-substituted) C1-8 alkyl, C1-8  
     alkoxy, C2-8 alkenyl, C3-8 alkenyloxy; B, C, D = 1,6-C6H10, 1,6-C6H2X2X3;  
     X2-3 = H, F, Me; Z1-2 =CO2, OCO, C2H4, OCH2, CH2O, CH:CH, CF:CF, CH:NN:CH,  
     C.tplbond.C; m = 0, 1) and having nematic phase-isotropic liquid phase  
     transition temperature (TN-I) 70-180° and refractive index anisotropy  
     (Δn) 0.06-0.30 are claimed. Also claimed is displays using the  
     claimed liquid crystal compns. The compns. show prevented image burn and  
     steep voltage-transmission characteristics.  
 ST nematic liq crystal compn display; cyanophenylcyclohexane liq crystal  
     compn; cyanofluorophenyl alkenyl cyclohexane liq crystal compn  
 IT Liquid crystal displays

(nematic liquid crystal compns. and liquid crystal displays free of image burn)

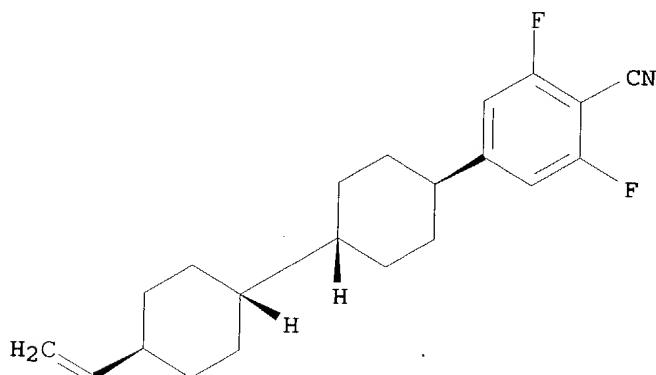
IT Liquid crystals  
 (nematic; nematic liquid crystal compns. and liquid crystal displays free of image burn)

IT 59854-97-6 59855-03-7 59855-05-9 85583-83-1 86776-50-3  
 86776-51-4 86776-52-5 88038-92-0 107949-21-3 107949-22-4  
 126702-59-8 128060-75-3 129738-34-7 129738-42-7 155041-85-3  
 157453-50-4 157453-54-8 184652-93-5 337366-98-0 **477557-84-9**  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 (liquid crystal compns. containing; nematic liquid crystal compns. and liquid crystal displays free of image burn)

IT **477557-84-9**  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 (liquid crystal compns. containing; nematic liquid crystal compns. and liquid crystal displays free of image burn)

RN 477557-84-9 CAPLUS  
 CN Benzonitrile, 4-[(trans,trans)-4'-ethenyl[1,1'-bicyclohexyl]-4-yl]-2,6-difluoro- (9CI) (CA INDEX NAME)

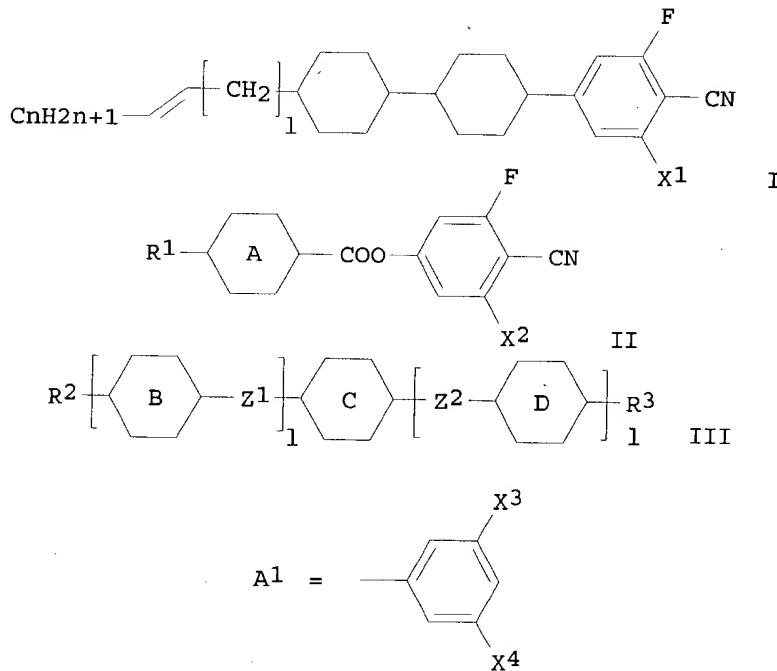
Relative stereochemistry.



L4 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2003:17385 CAPLUS  
 DN 138:80812  
 ED Entered STN: 09 Jan 2003  
 TI Nematic liquid crystal compositions and liquid crystal displays (LCD) giving high-contrast images at wide temperature ranges  
 IN Kuriyama, Takeshi; Takeuchi, Kiyofumi  
 PA ~~Dainippon~~ Ink and Chemicals, Inc., Japan  
 SO Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 IC ICM C09K019-46  
 ICS C09K019-12; C09K019-14; C09K019-18; C09K019-20; C09K019-30;  
 G02F001-13  
 CC 74-13 (Radiation Chemistry, Photochemistry, and Photographic and Other Reprographic Processes)  
 Section cross-reference(s): 75  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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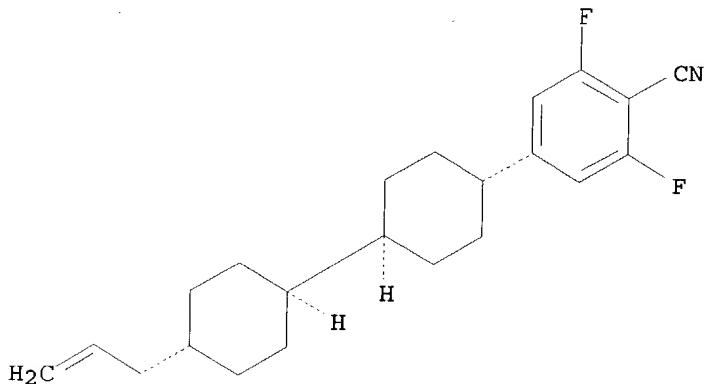
PI JP 2003003169 A2 20030108 JP 2001-189541 20010622  
 PRAI JP 2001-189541 20010622  
 CLASS  
 PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES  
 JP 2003003169 ICM C09K019-46  
 ICS C09K019-12; C09K019-14; C09K019-18; C09K019-20;  
 C09K019-30; G02F001-13  
 OS MARPAT 138:80812  
 GI



**AB** The compns. have nematic-isotropic transition point (TN-I) 70-180°, have refractive index anisotropy ( $\Delta n$ ) 0.06-0.30, and contain (1)  $\geq 1$  of I ( $X_1 = H, F$ ;  $l, n = 0-10$ ) (2)  $\geq 1$  of II ( $R^1 = C_2-8$  alkyl, alkoxy, alkenyl, alkenyloxy;  $A = 1,4-C_6H_6$ ,  $A^1$ ;  $X_2-4 = H, F$ ) and (3)  $\geq 1$  of III ( $R^{2-3} = C_1-8$  alkyl,  $C_1-8$  alkoxy,  $C_2-8$  alkenyl, or  $C_3-8$  alkenyloxy optionally having fluorine substitution;  $B, C, D = 1,4-C_6H_6$ ,  $A^2$ ;  $X_5-6 = H, F, Me$ ;  $Z_{1-2} = \text{single bond}, CO_2, C_2H_4, CH:CH, CF:CF, C\_t\!p\!l\!b\!o\!n\!d.C$ ;  $i, j = 0, 1$ ;  $i + j = 1, 2$ ). LCD comprising the compns., especially super-twisted nematic LCD of twist angle 180-270°, is also claimed.  
**ST** nematic liq crystal compn; **STN** liq crystal display compn  
**IT** Liquid crystal displays  
 for (nematic liq crystal composition containing; nematic liquid crystal compns.  
**IT** STN-LCD giving high-contrast images at wide temperature ranges)  
**IT** Liquid crystals  
 (nematic, super-twisted; nematic liquid crystal compns. for STN-LCD giving high-contrast images at wide temperature ranges)  
**IT** Liquid crystals  
 (nematic; nematic liquid crystal compns. for STN-LCD giving high-contrast images at wide temperature ranges)  
**IT** 39969-28-3 61203-99-4 80944-44-1 85583-83-1 86776-50-3  
 86776-51-4 86776-52-5 88038-92-0 107949-21-3 107949-22-4

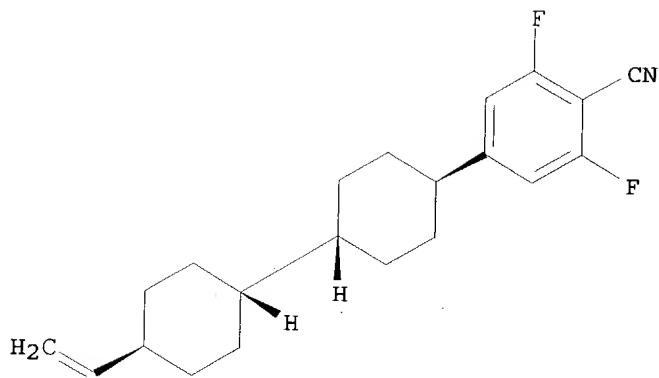
111336-21-1 115978-59-1 123843-69-6 123843-78-7 128060-75-3  
 222725-48-6 330207-83-5 482373-31-9 482373-35-3 482373-36-4  
 482373-37-5 **482373-38-6** 482373-39-7  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 for (nematic liq crystal composition containing; nematic liquid crystal compns.  
 IT STN-LCD giving high-contrast images at wide temperature ranges)  
 157453-52-6 169152-36-7 **477557-84-9** **482373-40-0**  
**482373-41-1** 482373-42-2 **482373-43-3**  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 for (nematic liq crystal composition containing; nematic liquid crystal compns.  
 IT STN-LCD giving high-contrast images at wide temperature ranges)  
**482373-38-6**  
 RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)  
 for (nematic liq crystal composition containing; nematic liquid crystal compns.  
 RN STN-LCD giving high-contrast images at wide temperature ranges)  
 482373-38-6 CAPLUS  
 CN Benzonitrile, 2,6-difluoro-4-[(trans,trans)-4'-(2-propenyl)[1,1'-bicyclohexyl]-4-yl]-(9CI) (CA INDEX NAME)

Relative stereochemistry.



IT **477557-84-9** **482373-40-0** **482373-41-1**  
**482373-43-3**  
 RL: TEM (Technical or engineered material use); USES (Uses)  
 (nematic liq crystal composition containing; nematic liquid crystal compns.  
 for STN-LCD giving high-contrast images at wide temperature ranges)  
 RN 477557-84-9 CAPLUS  
 CN Benzonitrile, 4-[(trans,trans)-4'-ethenyl[1,1'-bicyclohexyl]-4-yl]-2,6-difluoro- (9CI) (CA INDEX NAME)

Relative stereochemistry.

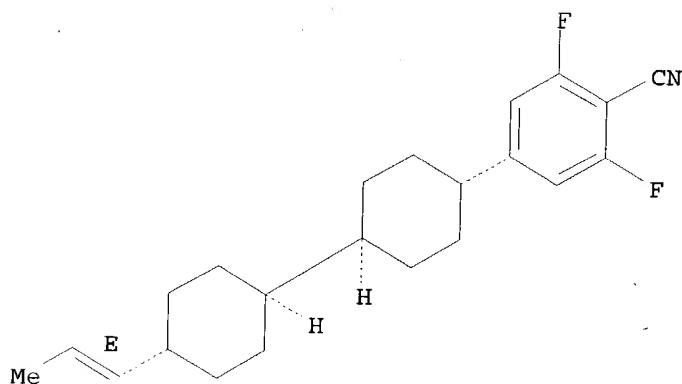


RN 482373-40-0 CAPLUS

CN Benzonitrile, 2,6-difluoro-4-[(trans,trans)-4'-(1E)-1-propenyl[1,1'-bicyclohexyl]-4-yl]- (9CI) (CA INDEX NAME)

Relative stereochemistry.

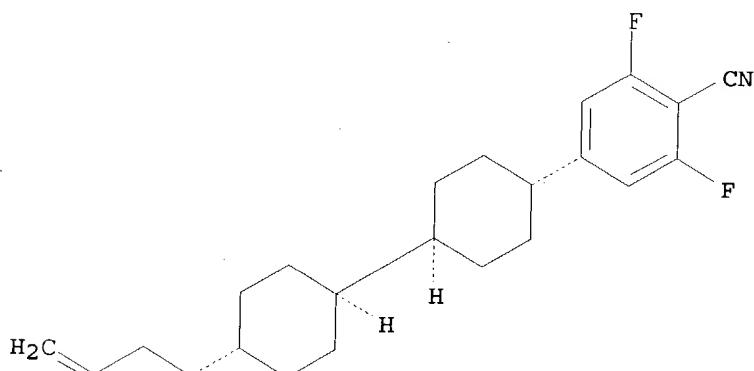
Double bond geometry as shown.



RN 482373-41-1 CAPLUS

CN Benzonitrile, 4-[(trans,trans)-4'-(3-butenyl)[1,1'-bicyclohexyl]-4-yl]-2,6-difluoro- (9CI) (CA INDEX NAME)

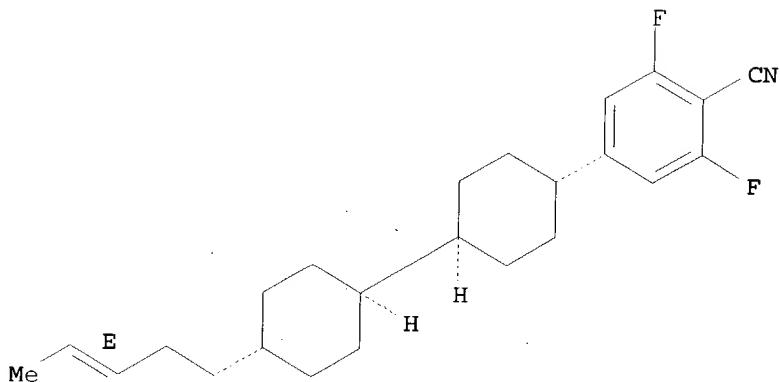
Relative stereochemistry.



RN 482373-43-3 CAPLUS

CN Benzonitrile, 2,6-difluoro-4-[(trans,trans)-4'-(3E)-3-pentenyl[1,1'-bicyclohexyl]-4-yl]- (9CI) (CA INDEX NAME)

Relative stereochemistry.  
Double bond geometry as shown.



L4 ANSWER 3 OF 3 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2002:924311 CAPLUS  
DN 138:13926  
ED Entered STN: 05 Dec 2002  
TI Procedure for the production of polycyclic compounds  
PA Merck Patent GmbH, Germany  
SO Ger. Offen., 22 pp.  
CODEN: GWXXBX  
DT Patent  
LA German  
IC ICM C07F013-00  
ICS C07F003-06; C07F003-02; C07C025-18; C07C025-24; C07C013-28;  
C07C001-26; C07C255-49; C07B049-00; C07B037-04; C07D521-00  
CC 24-5 (Alicyclic Compounds)  
Section cross-reference(s): 75

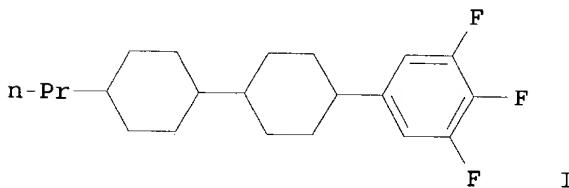
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI DE 10220549	A1	20021205	DE 2002-10220549	20020508
PRAI DE 2001-10125633	A1	20010525		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
DE 10220549	ICM	C07F013-00
	ICS	C07F003-06; C07F003-02; C07C025-18; C07C025-24; C07C013-28; C07C001-26; C07C255-49; C07B049-00; C07B037-04; C07D521-00

OS MARPAT 138:13926  
GI



AB Polycyclic compds. R1AkZ1mA1EnQo(Z2A2)pR2 [R1 = H, halogen,  
(un)substituted alkyl; R2 = H, halogen, CN, NCS, SF5, (un)substituted

alkyl, NH<sub>2</sub>, CO<sub>2</sub>H; A = (un)substituted 1,4-cyclohexanediyl, 1,4-oxacyclohexanediyl, 1,4-thiacyclohexanediyl, 1,4-cyclohexenediyl, 1,4-bicyclo[2.2.2]octanediyl, C<sub>6</sub>H<sub>4</sub>, azaphenylene; A<sub>1</sub> = (un)substituted decahydronaphthalene-2,6-diyl, 4,4'-bicyclohexanediyl, cyclohexylethylcyclohexane-4,4'-diyl, cyclohexylethylcyclohexene-4,4'-diyl; A<sub>2</sub> = A or A<sub>1</sub>; E = (un)substituted CH:CH; Z<sub>1</sub>, Z<sub>2</sub> = CH<sub>2</sub>CH<sub>2</sub>, CH<sub>2</sub>CHF, CHFC<sub>2</sub>, CHFCH<sub>2</sub>, CF<sub>2</sub>CH<sub>2</sub>, CH<sub>2</sub>CF<sub>2</sub>, CF<sub>2</sub>CHF, CHFCF<sub>2</sub>, CF<sub>2</sub>CF<sub>2</sub>, CH:CH, CF:CH, CH:CF, CF:CF, OCH<sub>2</sub>, CH<sub>2</sub>O, CF<sub>2</sub>O, OCF<sub>2</sub>, CO<sub>2</sub>, O<sub>2</sub>C, CHCNCH<sub>2</sub>, CH<sub>2</sub>CHCN, bond; Q = (un)substituted p-C<sub>6</sub>H<sub>4</sub>, azaphenylene, 1,4-cyclohexanediyl, oxa cyclohexane-1,4-diyl, thiacyclohexane-1,4-diyl, 1,4-cyclohexenediyl, bicyclo[2.2.2]octane-1,4-diyl; k, n, o = 0, 1; m, p = 0-2] were prepared by treating an organometallic compound R<sub>1</sub>A<sub>0</sub>kZ<sub>1</sub>mAlM [M = MgCl, MgBr, MgI, MnCl, MnBr, MnI, ZnCl, ZnBr, ZnI, ZnA<sub>1</sub>Z<sub>1</sub>mAkR<sub>1</sub>] with XEnQo(Z<sub>2</sub>A<sub>2</sub>)pR<sub>2</sub> [X = Cl, Br, I, O<sub>3</sub>S(CF<sub>2</sub>)<sub>0</sub>-10CF<sub>3</sub>] in presence of a metal catalyst. The procedure is used advantageously for the production of liquid crystalline compds. Thus, 1-bromo-4-(4-propylcyclohexyl)cyclohexane was treated with Mg and 3,4,5-F<sub>3</sub>C<sub>6</sub>H<sub>2</sub>Br to give the bicyclohexane I.

ST cyclohexane polycyclic prepn liq. crystal  
IT Liquid crystals

(procedure for the production of polycyclic compds.)

IT 83838-64-6P 142400-92-8P 143361-58-4P 324754-79-2P 477557-79-2P  
477557-80-5P **477557-84-9P**

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(procedure for the production of polycyclic compds.)

IT 78-94-4, 3-Buten-2-one, reactions 110-91-8, Morpholine, reactions 348-61-8, 1-Bromo-3,4-difluorobenzene 593-60-2, Bromoethylene 623-00-7, 4-Bromobenzonitrile 40649-36-3, 4-Propylcyclohexanone 46310-14-9, trans,trans-Bicyclohexane-4,4'-diol 105942-08-3, 4-Bromo-2-fluorobenzonitrile 123843-67-4, 4-Bromo-2,6-difluorobenzonitrile 138526-69-9, 1-Bromo-3,4,5-trifluorobenzene 477557-78-1

RL: RCT (Reactant); RACT (Reactant or reagent)

(procedure for the production of polycyclic compds.)

IT 82254-86-2P 324754-77-0P 326796-25-2P 363619-23-2P 477557-81-6P  
477557-82-7P **477557-83-8P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(procedure for the production of polycyclic compds.)

IT 157453-53-7P

RL: SPN (Synthetic preparation); PREP (Preparation)

(procedure for the production of polycyclic compds.)

IT **477557-84-9P**

RL: IMF (Industrial manufacture); SPN (Synthetic preparation); PREP (Preparation)

(procedure for the production of polycyclic compds.)

RN 477557-84-9 CAPLUS

CN Benzonitrile, 4-[(trans,trans)-4'-ethenyl[1,1'-bicyclohexyl]-4-yl]-2,6-difluoro- (9CI) (CA INDEX NAME)

Relative stereochemistry.

